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July 20, 2012

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th St. SW
Washington, DC 20553

Re: PS Docket 11-60

I am writing today to offer comments as the FCC investigates service outages that occurred in Northern Virginia following a recent storm.

While the complete failure of E911 service is a major problem, it seems clear that the root cause(s) of the inability to route calls to the PSAP(s) will be identified shortly and resolved in due course.

There's another weakness, however, that merits concurrent investigation. As the Commission knows, the architecture of many telecommunication networks has changed significantly in recent years. In a modern network, many customers aren't connected to a central office directly. Traditional copper phone lines may pass through a remote switch component or subscriber line concentrator. Every fiber-to-the-premises customer has equipment at the premises being served; the same is true for coaxial-cable customers. Wireless phone users depend on the operation of nearby cell sites as well as backhaul facilities.

Central offices use commercial power and have extensive backup capabilities (large battery power systems and additional support from generators). As we've seen, failures aren't impossible—but they are rare. The remote facilities discussed above also depend on commercial power. I think that FCC rules require eight hours of battery backup for these remote facilities. This is significant protection, but it's still well short of what's required for a central office.

There are many practical and economic factors that make it impossible for telecom providers to provide central office-class power backup at every remote facility. Even if E911 systems operate perfectly in the future, many will be unable to access emergency services during extended power outages. Future emergency planning efforts need to recognize this reality.

The FCC can help by requiring carriers provide documentation so the extent of the challenge can be understood. Carriers should be asked to presume a complete loss of commercial power in their service area, then answer questions like these: How many customers will lose service immediately upon a power failure? How many after a few hours? How many after 8 hours? How many after a day? What about a week or more? Are these outages distributed equally on a geographic basis, or are there neighborhoods/areas that are particularly vulnerable? It's also worth asking about backup failure rates experienced in the past—the planning process shouldn't assume perfect performance. Finally, after power-loss events like those recently experienced, carriers should be required to compare their estimates with actual performance under adverse conditions.

These new problems don't point to carrier incompetence or malfeasance; they're just side effects of the gradual transition of communication networks from a centralized to a distributed model. This transition is mostly good; things like affordable consumer broadband really wouldn't be possible any other way. But any new technology brings with it new risks. The FCC can advance the public interest by ensuring that these new risks are well-understood by those with responsibilities for public safety and emergency planning.

Sincerely,

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